

# Emily Sperou

Baylor PhD Student – Ecology, Evolution, and Organismal Biology

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## EDUCATION

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- 2020-Present    **Ph.D., Baylor University** (Biology)  
*Comparing intraspecific variation and behavioral flexibility in the ecology and physiology of leopard seals* (Hydrurga leptonyx)
- 2020            **M.S., Sonoma State University** (Physiological Ecology, *With Distinction*)  
*A comprehensive analysis of sex hormones and their role in reproductive suppression in female northern elephant seals* (Mirounga angustirostris)
- 2017            **B.S., Sonoma State University** (Biology, *Magna Cum Laude*)  
*Plasma oxytocin concentrations linked with age and breeding status, possible explanation of maternal behavior in northern elephant seals* (Mirounga angustirostris)

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## PUBLICATIONS

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- 2023            **ES Sperou**, D Costa, M Goebel, S Kanatous, D Crocker, R Borrás-Chavez, S Trumble, S Kienle. Large and in charge: Cortisol levels vary with sex, diet and body mass in an Antarctic predator, the leopard seal. *Frontiers for Marine Science*. <https://doi.org/10.3389/fmars.2023.1179236>
- 2023            P Charapata, CT Clark, N Miller, S Kienle, D Costa, M Goebel, **ES Sperou**, H Gunn, S Kanatous, D Crocker, R Borrás-Chavez, S Trumble. Whiskers provide time-series of toxic and essential trace elements, Se:Hg molar ratios, and stable isotope ratios of an apex Antarctic predator, the leopard seal. *Science of the Total Environment*. <https://doi.org/10.1016/j.scitotenv.2022.158651>
- 2022            HG Molinaro, GS Anderson, L Gruny, **ES Sperou**, DJ Heard. Use of Blood Lactate as a Stress Indicator in Manual Capture Techniques of Captive Crocodylians. *Animals*. <https://doi.org/10.3390/ani12030397>
- 2021            CL Rzcudlo, **ES Sperou**, RR Holser, JI Khudyakov, DP Costa, DE Crocker. Changes in serum adipokines during natural extended fasts in female northern elephant seals. *General and Comparative Endocrinology*. <https://doi.org/10.1016/j.ygcen.2021.113760>
- Accepted*        DN Orbach, **ES Sperou**, M Guinn, P. Charapata. Hormones and Reproductive Cycles in Marine Mammals. In: Norris, D., Lopez, K., eds. *Hormones and Reproduction in Vertebrates*, Volume 5: Mammals, 2<sup>nd</sup> ed. Elsevier.

- In Review* SS Kienle, C Bonin-Lewallen, ME Goebel, **ES Sperou**, R Borrás-Chavez. Paired observation of wild mating behavior and acoustics in leopard seals. *Polar Biology*.
- In Prep* **ES Sperou**, CL Rzedidlo, DS Houser, DP Costa, DE Crocker. A comprehensive analysis of sex hormones and their role in reproductive suppression in female northern elephant seals. *Functional Ecology*.
- In Prep* **ES Sperou**, DJ Krause, R Borrás-Chavez, P Charapata, DP Costa, DE Crocker, A Best, J Anderson, KJ Smith, ME Goebel, SS Kienle. Sex differences and individual variability in trophic ecology of leopard seals from a single location. *Journal of Animal Ecology*.
- In Prep* R Borrás-Chavez, **ES Sperou**, L Krüger, F Santa Cruz, CA Cárdenas. Pinnipeds' foraging ecology and their overlap with fisheries in the Western Antarctic Peninsula and Scotia Arc. *Frontiers in Ecology and Evolution*.

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## GRANTS & FELLOWSHIPS

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- \$25,000** Graduate School Fellowship, Baylor University (2020-2025)
- \$15,000** Summer Research Award Program, Baylor University (2022, PI: Sarah Kienle)\*
- \$7,000** Student University Grant, Sonoma State University (2019)
- \$5,000** Lewis and Clark Fund for Exploration and Field Research (2022)
- \$5,000** Office of National Marine Sanctuaries (CBNMS) Intern, NOAA (2016)
- \$4,000** Sonoma State University Presidential Scholar (2014-2017)
- \$3,500** AMNH Lerner-Gray Memorial Fund (2022)
- \$2,500** NSF Travel Award Grant (2023)
- \$2,500** CSU Council on Ocean Affairs, Science & Tech. Scholarship (2017)
- \$2,000** SICB Fellowship for Student Travel (2024)
- \$2,000** Forrest W. and Ida J. Benson Scholarship (2017)
- \$2,000** Moore-Amaral Scholarship (2017)
- \$2,000** The Art & Elizabeth Condiotti Scholarship (2017)
- \$2,400** Cornelia Smith Scholarship (2021-2023)
- \$1,000** Polar Science Early Career Community Office (PSECCO) Belonging, Accessibility, Justice, Equity, Diversity and Inclusion (BAJEDI) grant (2023)
- \$1,000** Fish & Wildlife Commission Scholarship (2019)
- \$1,000** Office of Research & Sponsored Program's Student Research Award (2018)
- \$1,000** Sonoma State University "The Student Research Grant" (2018)
- \$1,000** Koret Scholarship (2017)
- \$800** Baylor Doctoral Research Award, Baylor University (2023)
- \$400** Baylor Research Travel Grant, Baylor University (2023)

\*Contributed to writing

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## A W A R D S

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- 2022-2023** Certificate of Excellence in Research, Baylor University  
**2019** Honorable Mention, NSF Graduate Research Fellowship Program  
**2017** *Magna Cum Laude* (B.S.), Sonoma State University  
**2014-2017** Sonoma State University Dean's List  
**2014-2017** Sonoma State University Presidential Scholar

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## R E S E A R C H E X P E R I E N C E

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**Graduate Researcher, Biology, Baylor University (2020-Present)**

Adviser: Dr. Sarah Kienle

*Comparing intraspecific variation and behavioral flexibility in the ecology and physiology of leopard seals*

**Graduate Researcher, Physiological Ecology, Sonoma State University (2018-2020)**

Adviser: Dr. Daniel Crocker

*A comprehensive analysis of sex hormones and their role in reproductive suppression in female northern elephant seals (*Mirounga angustirostris*)*

**Research Assistant, U.S. National Park Service, Point Reyes, CA (2018)**

Adviser: Sarah Codde

*Assessment and survey of wild northern elephant seals: pups, juveniles, subadults, adults*

**Undergraduate Research Assistant, Physiological Ecology, Sonoma State University (2016-2017)**

Adviser: Dr. Daniel Crocker

*Plasma oxytocin concentrations linked with age and breeding status, possible explanation of maternal behavior in northern elephant seals (*Mirounga angustirostris*)*

**NOAA Office of National Marine Sanctuaries Intern, Cordell Bank National Marine Sanctuary (2016)**

Adviser: Dr. Daniel Lipski

*ROV exploration into Cordell Bank National Marine Sanctuary*

**Undergraduate Research Assistant, Safari West (2015)**

Adviser: Dr. Erika Defer

*Behavioral observations of a diversity of mammal species located at Safari West*

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## T E A C H I N G E X P E R I E N C E

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**Teaching Assistant**

**Human Physiology and Anatomy, Baylor University (75 students per semester, 5 semesters, 2020-2023)**

**Modern Con. in Biosciences Lab**, Baylor University (75 students 1 semester, 2021)

**Comparative Vertebrate Physiology**, Baylor University (25 students, 1 semester, 2021)

**Intro. to Cell Biology and Genetics**, Sonoma State University (125 students per semester, 2 semesters, 2019-2020)

**Biological Diversity and Ecology**, Sonoma State University (75 students, 2 semesters, 2019)

**Intro. to Biology**, Sonoma State University (100 students, 2 semesters, 2018-2019)

**Instructor**

**Intro. to Biology**, TRIO Upward Bound (40 students, 3 semesters 2019-2022)

**Advanced Biology**, TRIO Upward Bound (40 students, 3 semesters, 2019-2022)

**AP Biology**, TRIO Upward Bound (10 students, 1 semester, 2018)

**Marine Biology**, EXCEL Program (15 students, 1 semester, 2017)

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P R E S E N T A T I O N S

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- 2023      Scientific Committee on Antarctic Research Biology Symposium (NZ)  
*Variability And Individual Plasticity in Resource Use in The Antarctic Apex Predator, The Leopard Seal*
- 2023      Society of Integrative and Comparative Biology (USA)  
*Hot off the stress: Leopard seals exhibit high cortisol driven by sex, diet, and mass*
- 2022      Society of Integrative and Comparative Biology (USA)  
*A comprehensive analysis of sex hormones and their role in reproductive suppression in female northern elephant seals*
- 2020      Alaska Stranding Network Annual Meeting (USA)  
*Stranded Gray Whale Tissue Provide Insight into Unusual Mortality Event*
- 2018      Sonoma State Science Symposium (USA)  
*An analysis of sex hormones and adipokines in northern elephant seals*
- 2017      Sonoma State Science Symposium (USA)  
*Plasma oxytocin concentrations linked with age and breeding status, possible explanation of maternal behavior in northern elephant seals*

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M E N T O R I N G

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|--------------|-----------------|---|
| 2022-Present | Azana Best      | Baylor Uni. McNair Scholar (underrepresented) |
| 2022-Present | Jaelyn Anderson | Baylor Uni. Veteran (underrepresented)        |

2020-2022                  Marcus Botos                  Baylor Uni. (underrepresented)

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## SERVICE & OUTREACH

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**Baylor**                      Graduate Assistant for McNair Scholars Program (2020-present)  
Present Your PhD (PYPhD) member (2020-present)  
Graduate Student Panelist for McNair Scholars Conference (250 students)  
Portal to the public training (Mayborn Museum)

**Workshops**              **Research Methods for Undergraduates**  
(creator/coordinator: 50 undergraduate students; Baylor University; 2023)  
**Creating your letter of recommendation package**  
(creator/coordinator: 50 undergraduate students; Baylor University; 2022)  
**Finding the ideal advisor**  
(creator/coordinator: 50 undergraduate students; Baylor University; 2022)  
**Graduate students tell all about graduate school**  
(creator/coordinator: 50 undergraduate students; Baylor University; 2021)  
**Tips and tricks for writing a CV and personal statement**  
(creator/coordinator: 50 undergraduate students; Baylor University; 2021)  
**Steps for applying to graduate school**  
(creator/coordinator: 50 undergraduate students; Baylor University; 2021)

**Sonoma State**              Graduate Student Representative (2019)  
Learning & Academic Resource Center Tutor (2015-2018)

**K-12**                        TRIO Upward Bound Instructor (300 students; 2018-present)  
Bosque Elementary School “STEAM Day” (500 students; 2022-2023)  
  
EXCEL for Youth Program Instructor (50 students; 2018)  
Presenter for Upward Bound “Career Day” (150 students; 2020)  
Scientist for “Skype A Scientist” (50 students; 2022)

**Public**                      Sic’Em Science Day-Mayborn Museum TX (800 people; 2022-2023)  
South Bosque Eelementary“STEAM Day”  
Speaker for PyPhd at Waco’s Farmers Market (150 people; 2022)  
Speaker for “Animal Day” at The Children’s Museum (100 people; 2019)

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## PRESS

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2023                      Baylor University Office of the President. [\*APEX LEOPARD SEALS: Advancing Research in Antarctica.\*](#)

2023                      Baylor University Media and Public Relations. [\*Large and In Charge: Baylor Research Team Establishes Baseline Data on Cortisol Levels in Leopard Seals. Mysterious Apex Predators in Antarctica\*](#)

2023

Baylor University Biology Department. [\*Baylor Graduate School-Biology Department Video\*](#)

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PROFESSIONAL MEMBERSHIPS

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Graduate Women in Science and Engineering (GWIS), Society for Integrative and Comparative Biology (SICB), Society for Marine Mammalogy (SMM), Present Your PhD (PyPHD), Baylor Women in Science and Engineering (WISE), The Animal Behavior Society (ABS)